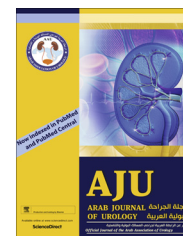




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ORIGINAL ARTICLE

Repair of panurethral stricture: Proximal ventral and distal dorsal onlay technique of buccal mucosal graft urethroplasty

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KEYWORDS

Buccal mucosal graft urethroplasty;
Dorsal onlay;
Panurethral stricture;
Stricture urethra;
Ventral onlay

ABBREVIATIONS

BMG, buccal mucosal graft;
DVIU, direct visual internal urethrotomy;
LS, lichen sclerosus;
SPC, suprapubic cystostomy

Abstract Objective: To report the surgical details and results of our technique of buccal mucosal graft (BMG) urethroplasty for panurethral stricture, as many studies have reported repair of panurethral stricture by single-stage BMG urethroplasty by placing buccal mucosa ventrally, dorsally or dorsolaterally.

Patients and methods: This was an observational analysis of 38 patients with panurethral stricture treated by placing two BMGs, one as a ventral onlay in the proximal bulbar urethra and the other as a dorsal onlay in the distal bulbar and penile urethra. Success was defined as asymptomatic state with or without need for a postoperative single intervention such as dilatation or internal urethrotomy.

Results: The 38 patients had a mean age of 44 years, with lichen sclerosus as the predominant cause of stricture. The ultimate success rate was 84.2% at the end of 3 months and 89.5% at the end of 1 year. Recurrent strictures appeared only in the failed cases during the follow-up period of 11 months. None of the patients needed redo urethroplasty during the follow-up period.

Conclusions: A proximal ventral and distal dorsal onlay technique of BMG urethroplasty is an available alternative for repairing panurethral stricture. The technique described is simple and easily reproducible with encouraging results compared to other similar techniques.

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Introduction

Buccal mucosal graft (BMG) urethroplasty has recently gained in popularity for urethral reconstruction. In many studies, authors have reported repair of panure-

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thral stricture by single-stage BMG urethroplasty by placing buccal mucosa ventrally, dorsally or dorsolaterally [1]. In our technique, we place buccal mucosa ventrally in the proximal bulbar urethra and dorsally in the distal bulbar and penile urethra. The present study was conducted with the aim of reporting the surgical details and results of our technique of BMG urethroplasty for panurethral stricture.

Patients and methods

This was an observational analysis of 38 patients with panurethral stricture treated between August 2013 and August 2015. Institutional Ethics Committee approval was obtained before commencing this study. All patients were treated with our technique of BMG urethroplasty during the study period. Other techniques of anterior urethroplasty were not done during this period. All the data were collected according to the following inclusion and exclusion criteria.

Inclusion criteria:

- All patients with panurethral stricture aged 20–65 years.
- Panurethral stricture with history of direct visual internal urethrotomy (DVIU) or dilatation.

Exclusion criteria:

- All cases with history of failed urethroplasty.
- Panurethral strictures with complete or near complete obliteration of the lumen.

Preoperative preparation

Each patient was preoperatively evaluated with a history, clinical examination, urine culture and sensitivity, uroflowmetry, ultrasonography of the abdomen, and a retrograde urethrogram. All patients were treated with appropriate antibiotics based on the urine culture and sensitivity perioperatively.

Our technique of urethroplasty: proximal ventral and distal dorsal onlay BMG urethroplasty

The patient was either nasally or orally intubated and placed in lithotomy. Two teams worked simultaneously with separate sets of instruments to avoid cross contamination, one harvesting oral mucosa and the other preparing the urethra for repair. Oral mucosa was harvested from each cheek as described by Kulkarni et al. [2]. The bulbar urethra was exposed via a midline perineal incision. The penile urethra was exposed via a circumcoronal incision with penile degloving, followed by bringing down the penis to the perineal wound. The lumen of the stricture is usually intubated with either a 6-F feeding tube or with a 0.089 cm (0.035") guidewire,

and the stricture is incised until normal urethra is identified. Ventral urethrotomy was performed over the proximal bulbar urethra below the distal edge of the bulbospongiosum and was extended 5 mm into the normal urethra proximally (Fig. 1). Both distal bulbar and penile urethrae were dissected circumferentially from the cavernosa by the classic Barbagli technique up to its attachment with the glans [3]. Subsequently, the distal bulbar and penile urethrae were incised dorsally through the stricture with the proximal limit corresponding to the visible ventral urethral incision (Fig. 1). We placed one graft over the incised part of the proximal bulbar urethra and fixed it to the edges of urethra with 4-0 polyglactin 910 (Vicryl®; Ethicon Inc., Somerville, NJ, USA) (Fig. 2). The overlying spongiosa was closed over the graft. The second graft was placed on the dorsal aspect of the distal bulbar and penile urethrae. It was fixed to the edges of the incised part of that urethra and tunica albuginea of the corpus cavernosa by applying several 4-0 polyglactin 910 sutures (Fig. 3). Care should be taken to keep the mucosal side of both grafts towards the lumen of the urethra. The proximal end of the dorsally placed BMG overlapped with the distal end of the ventrally placed BMG by about 0.5–1 cm (Fig. 3). In the case of severe meatal stenosis, ventral meatotomy was performed until the upper border of the graft sutured dorsally was visible (Fig. 4). The penis was repositioned in its normal anatomy and a 14-F silicone Foley passed per urethra. In all cases we aimed to achieve a minimum 16-F lumen in every case at the end of surgery. Penile skin was placed back into the circumcisional position and the edges created by the ventral meatotomy were sutured to the skin. The perineal wound was closed in layers after placing a suction drain. The perineal pressure dressing was chan-

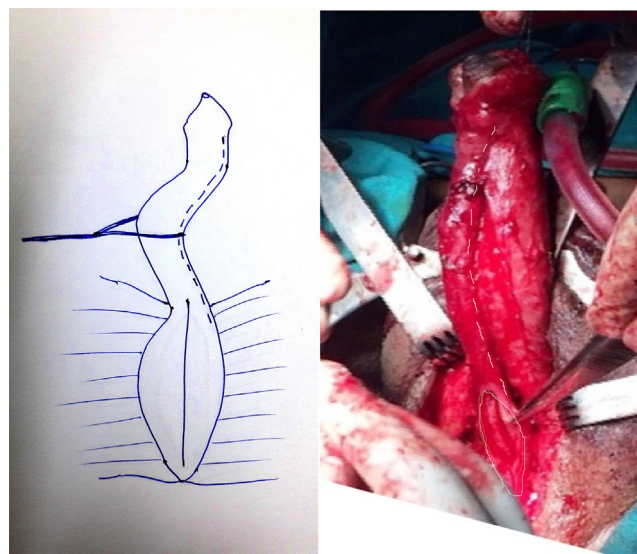


Fig. 1 Proximal ventral urethrotomy and distal dorsal urethrotomy.

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